Although a preferred embodiment of the invention has been described using specific terms, such description is for illustrative purposes only, and it is to be understood that changes and variations may be made without departing from the spirit or scope of the following claims.

What is claimed is:

1. A soluble T cell receptor fusion complex comprising a T cell receptor and a biologically active polypeptide connected by a peptide linker, wherein the T cell receptor has one recognition binding site and the biologically active polypeptide has a different recognition binding site.

2. The soluble T cell receptor fusion complex of claim 1 wherein the T cell receptor is specific for recognition of a particular antigen.

3. The soluble T cell receptor fusion complex of claim 1 or 2 wherein the T cell receptor is a heterodimer comprising α and β chain TCR.

4. The soluble T cell receptor fusion complex of claim 1-3 wherein the T cell receptor α and β chains are linked through a non-covalent linkage.

5. The soluble T cell receptor fusion complex of claim 1 or claim 2 wherein the T cell receptor comprises a single chain T cell receptor polypeptide.

6. The soluble T cell receptor fusion complex of claim 1-5 wherein the biologically active polypeptide is specific for recognition of an effector cell.

7. The soluble T cell receptor fusion complex of claim 1-6 wherein the biologically active polypeptide comprises an immunoglobulin domain or fragment thereof.

8. The soluble T cell receptor fusion complex of claim 1-7 wherein the biologically active polypeptide comprises a kappa constant chain immunoglobulin domain or fragment thereof.

9. The soluble T cell receptor fusion complex of claim 1-8 wherein the biologically active polypeptide comprises a cytokine or a fragment thereof.

10. The soluble T cell receptor fusion complex of claim 1-9 wherein the biologically active polypeptide comprises an IL-2 cytokine or a fragment thereof.

11. The soluble T cell receptor fusion complex of claim 1-10 wherein the biologically active polypeptide comprises an IL-10 cytokine or a fragment thereof.

12. The soluble T cell receptor fusion complex of claim 1-11 wherein the biologically active polypeptide comprises a chemokine or a fragment thereof.

13. The soluble T cell receptor fusion complex of claim 1-12 wherein the biologically active polypeptide comprises a growth factor or a fragment thereof.

14. The soluble T cell receptor fusion complex of claim 1-13 wherein the biologically active polypeptide comprises GCSF or a fragment thereof.

15. The soluble T cell receptor fusion complex of claim 1-14 wherein the biologically active polypeptide comprises a protein toxin domain or a fragment thereof.

16. A method of preparing a soluble T cell receptor fusion complex, the method comprising:

providing a T cell receptor chain, or subfragment thereof;

providing a biologically active polypeptide corresponding to a second chain, or subfragment thereof;

connecting the T cell receptor chain and the second chain to a peptide linker; and

recovering the linked T cell receptor fusion polypeptide complex, thereby generating a T cell receptor fusion complex.

17. The method of claim 16 wherein the T cell receptor and the biologically active polypeptide have different recognition sites.

18. The method of claim 16 or 17 wherein the T cell receptor is specific for recognition of a particular antigen.

19. The method of claim 16-18 wherein the T cell receptor is a TCR α chain.

20. The method of claim 16-19 wherein the T cell receptor is a TCR β chain.

21. The method of claim 16-20 wherein the T cell receptor comprises a single chain T cell receptor polypeptide.

22. The method of claim 16-21 wherein the biologically active polypeptide is an immunoglobulin domain or fragment thereof.

23. The method of claim 16-22 wherein the biologically active polypeptide comprises a kappa constant chain immunoglobulin domain or fragment thereof.

24. The method of claim 16-23 wherein the biologically active polypeptide comprises a cytokine or fragment thereof.

25. The method of claim 16-24 wherein the biologically active polypeptide comprises an IL-2 cytokine.

26. The method of claim 16-25 wherein the biologically active polypeptide comprises an IL-10 cytokine or a fragment thereof.

27. The method of claim 16-26 wherein the biologically active polypeptide comprises a chemokine or fragment thereof.

28. The method of claim 16-27 wherein the biologically active polypeptide comprises a growth factor or fragment thereof.

29. The method of claim 16-28 wherein the biologically active polypeptide comprises GCSF or fragment thereof.

30. The method of claim 16-29 wherein the biologically active polypeptide comprises a protein toxin domain or fragment thereof.

31. A soluble T cell receptor conjugate complex comprising a plurality of biologically active molecules covalently bound to a carrier having at least one remaining free amine group, the carrier being covalently bound to a portion of a single chain T cell receptor, wherein the resulting conjugate is soluble.

32. The soluble T cell receptor conjugate complex of claim 31 wherein the T cell receptor is specific for recognition of a particular antigen.

33. The soluble T cell receptor conjugate complex of claim 31or 32 wherein the T cell receptor is a heterodimer comprising α and β chain TCR.

34. The soluble T cell receptor conjugate complex of claim 31-33 wherein the T cell receptor α and β chains are linked through a non-covalent linkage.

35. The soluble T cell receptor conjugate complex of claim 31-34, wherein the T cell receptor is a single chain T cell receptor.

36. The soluble T cell receptor conjugate complex of claim 31-35, wherein the biologically active molecule is a cytotoxic molecule.

37. The soluble T cell receptor conjugate complex of claim 31-36, wherein the biologically active molecule is a toxin.

38. The soluble T cell receptor conjugate complex of claim 31-37, wherein the biologically active molecule is a chemotherapeutic agent.

39. The soluble T cell receptor conjugate complex of claim 31-38, wherein the biologically active molecule is an anti-cancer drug.

40. The soluble T cell receptor conjugate complex of claim 31-39, wherein the biologically active molecule is a detectable label.

41. The soluble T cell receptor conjugate complex of claim 31-40, wherein the biologically active molecule is a fluorescent compound or an electron transfer agent.

42. The soluble T cell receptor conjugate complex of claim 31-41, wherein the biologically active molecule is an enzyme.

43. The soluble T cell receptor conjugate complex of claim 31-42, wherein the biologically active molecule is a radioactive compound.

44. A method of preparing a soluble T cell receptor conjugate complex comprising:

reacting a polymer carrier which has covalently bound a plurality of biologically active molecules and, with a T cell receptor chain; and

reductively stabilizing the resulting conjugate molecule, wherein the resultant conjugate T cell receptor molecule is soluble.

45. The method of claim 44 wherein the T cell receptor is a single chain T cell receptor.

46. The method of claim 44 or 45 wherein the single chain T cell receptor is specific for recognition of an antigen.

47. The method of claim 44-46 wherein the biologically active molecule is a cytotoxic molecule.

48. The method of claim 44-47 wherein the biologically active molecule is a toxin.

49. The method of claim 44-48 wherein the biologically active molecule is a chemotherapeutic agent.

50. The method of claim 44-49 wherein the biologically active molecule is an anti-cancer drug.

51. The method of claim 44-50 wherein the biologically active molecule is a detectable label.

52. The method of claim 44-51 wherein the biologically active molecule is a fluorescent compound or an electron transfer agent.

53. The method of claim 44-52 wherein the biologically active molecule is an enzyme.

54. The method of claim 44-53 wherein the biologically active molecule is a radioactive compound.

55. A therapeutic composition for treatment of disorders comprising a therapeutically effective amount of the T cell receptor fusion complex of any one of claims 1-15 and a sterile, pharmaceutically acceptable carrier vehicle.

56. A therapeutic composition for treatment of disorders comprising a therapeutically effective amount of the T cell receptor conjugate complex of any one of claims 31-43 and a sterile, pharmaceutically acceptable carrier vehicle.

57. The therapeutic composition of claim 55 or 56 wherein the complex is directed to treatment of a malignant disorder.

58. The therapeutic composition of claim 55 or 56 wherein the complex is directed to treatment of an autoimmune disorder.

59. The therapeutic composition of claim 55 or 56 wherein the complex is directed to treatment of an inflammatory response.

60. The therapeutic composition of claim 55 or 56 wherein the complex is directed to treatment of an infectious disease.

61. The therapeutic composition of claim 55 or 56 wherein the complex is directed to treatment of a viral infection.

62. A diagnostic composition for indication of disorders comprising a diagnostically effective amount of the T cell receptor conjugate complex of any one of claims 31-43 and a sterile, pharmaceutically acceptable carrier vehicle.

63. The diagnostic composition of claim 62 wherein the T cell receptor conjugate complex is a detectably labeled molecule suitable for diagnostic or imaging studies.

64. A nucleic acid sequence encoding a T cell receptor fusion complex comprising a T cell receptor and a biologically active polypeptide connected by a peptide linker. wherein the T cell receptor has one recognition binding site and the biologically active polypeptide has a different recognition binding site.

65. The nucleic acid sequence of claim 64 wherein the T cell receptor is specific for recognition of a particular antigen.

66. The nucleic acid sequence of claim 64 or 65 wherein the T cell receptor is a heterodimer comprising α and β chain TCR.

67. The nucleic acid sequence of claim 64-66 wherein the T cell receptor α and β chains are linked through a non-covalent linkage.

68. The nucleic acid sequence of claim 64 or 65 wherein the T cell receptor comprises a single chain T cell receptor polypeptide.

69. The nucleic acid sequence of claim 64-68 wherein the biologically active polypeptide is specific for recognition of an effector cell.

70. The nucleic acid sequence of claim 64-69 wherein the biologically active polypeptide comprises an immunoglobulin domain or fragment thereof.

71. The nucleic acid sequence of claim 64-70 wherein the biologically active polypeptide comprises a kappa constant chain immunoglobulin domain or fragment thereof.

72. The nucleic acid sequence of claim 64-71 wherein the biologically active polypeptide comprises a cytokine or a fragment thereof.

73. The nucleic acid sequence of claim 64-72 wherein the biologically active polypeptide comprises an IL-2 cytokine or a fragment thereof.

74. The nucleic acid sequence of claim 64-73 wherein the biologically active polypeptide comprises an IL-10 cytokine or a fragment thereof.

75. The nucleic acid sequence of claim 64-74 wherein the biologically active polypeptide comprises a chemokine or a fragment thereof.

76. The nucleic acid sequence of claim 64-75 wherein the biologically active polypeptide comprises a growth factor or a fragment thereof.

77. The nucleic acid sequence of claim 64-76 wherein the biologically active polypeptide comprises GCSF or a fragment thereof.

78. The nucleic acid sequence of claim 64-77 wherein the biologically active polypeptide comprises a protein toxin domain or a fragment thereof.

79. The nucleic acid sequence of any one of claims 64-78 wherein the nucleic acid is DNA.

80. The nucleic acid sequence of any one of claims 64-78 wherein the nucleic acid is RNA.